CLAIMS

What is claimed is:

1. A method of controlling the balance of a photodetector in an optical recording and/or reproducing apparatus having first and second light sources in a single module, the method comprising :

directing light supplied from the first or second light source and transmitted through a holographic optical element, an optical path changing unit, and an objective lens onto a disk corresponding to each light source, transmitting the light reflected from the corresponding disk through the objective lens, and the optical path changing unit to the photodetector, moving the photodetector so that a center of a first spot received from said first light source by the photodetector is concentric with the center of the photodetector; and

moving the holographic optical element so that a center of a second received spot received from the second light source is concentric with the center of the photodetector.

2. The method of claim 1, wherein the moving of the holographic optical element comprises moving the holographic optical element in an optical axis direction to move the center of the second received spot.

3. The method of claim 2, wherein the moving of the holographic optical element comprises rotating the holographic optical element about an optical axis at a predetermined angle to move the center of the second received spot.

4. The method of claim 1, wherein the moving of the holographic optical element comprises rotating the holographic optical element about an optical axis at a predetermined angle to move the center of the second received spot.

5. A method of controlling the balance of a photodetector in an optical recording and/or reproducing device having first and second light sources fixed in position relative to each other, the method comprising:

moving the photodetector so that first light from the first light source and reflected from a corresponding first optical disk is concentric with the photodetector; and

moving a holographic optical element, which does not affect an optical path of the first light, so that second light from the second light source and reflected from a corresponding second optical disk is concentric with the photodetector.

6. The method of claim 5, wherein the moving of the holographic element comprises moving the holographic optical element in an optical axis direction so that the second light is concentric with the photodetector.

7. The method of claim 5, wherein the moving of the holographic element comprises rotating the holographic optical element about an optical axis so that the second light is concentric with the photodetector.

8. The method of claim 5, wherein the moving of the holographic element comprises moving the holographic optical element in an optical axis direction and rotating the holographic element about the optical axis so that the second light is concentric with the photodetector.

9. An apparatus to control the balance of a photodetector to increase the light reception efficiency from an optical recording medium, comprising:

an optical module having a first and a second light source to respectively emit first and second lights of different wavelengths;

a movable holographic optical element to regulate positioning of one of the first and second lights emitted from said optical module;

an optical path changing unit to receive and change the path of incident light received from said movable holographic optical element;

an objective lens to receive incident light received from said optical path changing unit and focus the same on the optical recording medium; and

a photodetector to receive first and second light spots from the light reflected from the optical recording medium and transmitted through said objective lens and said optical path changing unit;

wherein the photodetector is movable to regulate positioning of the other one of said first and second light spots.

10. The apparatus of claim 9, wherein said holographic optical element is movable in an optical axis direction to move the one of said first and second light spots received by said photodetector so that the one light spot is concentric with said photodetector.

11. The apparatus of claim 9, wherein said holographic optical element is rotatable about an optical axis at a predetermined angle to move the one of said first and second light spots received by said photodetector so that the one light spot is concentric with said photodetector.

12. The apparatus of claim 9, further comprising:

a grating positioned between the holographic optical element and the optical path changing unit.

13. An optical recording and/or reproducing apparatus comprising:

first and second light sources fixed in position relative to each other;

a photodetector movable so that first light from the first light source and reflected from a corresponding first optical disk is concentric with the photodetector; and

a holographic optical element, which does not affect an optical path of the first light, movable so that second light from the second light source and reflected from a corresponding second optical disk is concentric with the photodetector; and

an optical path changing unit directing the first and second light from the respective first and second light sources to the corresponding first and second disks, and directing the reflected first and second lights to the photodetector.

14. The optical recording and/or reproducing apparatus of claim 13, wherein the holographic optical element moves in an optical axis direction so that the second light is concentric with the photodetector.

15. The optical recording and/or reproducing apparatus of claim 13, wherein the holographic optical element rotates about an optical axis so that the second light is concentric with the photodetector.

16. The optical recording and/or reproducing apparatus of claim 13, wherein the holographic optical element moves in an optical axis direction and rotates about the optical axis so that the second light is concentric with the photodetector.